

REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 13-32 are presently pending in this application, Claims 1-12 having been canceled, Claims 13-32 having been newly added by the present amendment.

In the outstanding Office Action, Claims 8-12 were objected under 35 U.S.C. §112, second paragraph, as failing to set forth the subject matter; Claims 9-12 were objected to as depending from the objected to base claim; Claims 2 and 3 were rejected under 35 U.S.C. §102(b) as being anticipated by Ghaddar et al. ("J. Am. Chem. Soc., Vol. 124...") or Ceroni et al. ("New J. Chem., Vol. 2001, 25..."); and Claims 1-12 were rejected under 35 U.S.C. §103(a) as being unpatentable over Srinivasa et al. (U.S. Patent 6,037,471) taken with Baumann et al. (U.S. Patent 6,362,914), Ghaddar et al. or Ceroni et al.

The specification has been revised and amended to correct idiomatic and typographical informalities.

Claims 1-12 have been canceled and Claims 13-32 have been newly added herein. Thus, the rejection under 35 U.S.C. §112, second paragraph, and the objection in the claims are moot. Claims 13-32 are believed to be in compliance with the requirements of the statute and are believed to find clear support in the specification, claims and drawings as originally filed. For example, Claims 13-32 are believed to be supported by the first, second and third embodiments disclosed in page 14, line 16, to page 20, line 6, of the specification. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work in a joint effort to derive mutually satisfactory claim language.

Before addressing the outstanding art rejections, a brief summary of Claim 13 is believed to be helpful. Claim 13 is directed to a photochromic device including a

photochromic layer comprising a photochromic material which exhibits absorbance in a visible region upon being sensitized by a light having a wavelength of not less than 700 nm, and an ultraviolet light blocking device configured to block an ultraviolet light from sensitizing the photochromic material in the photochromic layer, wherein the ultraviolet light blocking device comprises at least one of an ultraviolet shielding layer positioned to shield the photochromic layer from the ultraviolet light and an ultraviolet light absorber included in the photochromic layer. By providing such a photochromic layer together with an ultraviolet blocking device, the photochromic device can be sensitized by a light in infrared region without being sensitized or deteriorated by an ultraviolet light, thereby eliminating the need for any sensor or electrical circuitry to control activation while being capable of being photonically activated by a xenon lamp without a sensor.¹

Srinivasa et al. and Baumann et al. disclose electrochromic compounds and electrochromic materials with enhanced ultraviolet stability, respectively. However, neither Srinivasa et al. nor Baumann et al. teaches or suggests “an ultraviolet light blocking device configured to block an ultraviolet light from sensitizing the photochromic material,” *where the photochromic material exhibits absorbance in a visible region upon being sensitized by a light having a wavelength of not less than 700 nm* as recited Claim 13. On the other hand, both Srinivasa et al. and Baumann et al. simply disclose *electrochromic* devices and compounds thought to be *electrochromic*, i.e., electrically activated compounds, and these references do not state or suggest whether any of their electrochromic compounds have the photochromic property and are *photochromic*, i.e., photonically activated compounds or can be employed as a photochromic layer in a display device or a mirror without their electrical circuitries and sensors. As such, Srinivasa et al. and Baumann et al. do not state or are not

¹ Specification, page 12, lines 16-25, and page 13, lines 2-11.

believed to suggest a photochromic material which exhibits absorbance in a visible region upon being sensitized by a light having a wavelength of not less than 700 nm, and an ultraviolet light blocking device for blocking an ultraviolet light from sensitizing the photochromic material. Therefore, the structure recited in Claim 13 is believed to be distinguishable from both Srinivasa et al. and Baumann et al.

Ceroni et al. is directed to a study on dendrimers with a 4,4'-bipyridine core, but does not teach or suggest "an ultraviolet light blocking device configured to block an ultraviolet light from sensitizing the photochromic material," *where the photochromic material exhibits absorbance in a visible region upon being sensitized by a light having a wavelength of not less than 700 nm* as recited Claim 13. Instead, Ceroni et al. shows electrochemical behavior and spectroscopic properties of some dendrimers with a 4,4'-bipyridine core, where the spectroscopic properties are absorptions at the wavelength range of 250 nm to 300 nm, and a fluorescence band having a peak at around 350 nm. The structure recited in Claim 13 is therefore believed to be distinguishable from Ceroni et al.

As discussed in the specification, Ghaddar et al. reports a study on dendrimers with a 4,4'-bipyridine core and naphthalene peripheral groups. However, Ghaddar et al. does not state or suggest "an ultraviolet light blocking device configured to block an ultraviolet light from sensitizing the photochromic material," *where the photochromic material exhibits absorbance in a visible region upon being sensitized by a light having a wavelength of not less than 700 nm* as recited Claim 13. That is, since Ghaddar et al. only reports the change in the absorbance of some 4,4'-bipyridine derivatives at a wavelength of 600 nm, *when excited by an ultraviolet light having a wavelength of 266 nm* but still does not show any photochromic property upon irradiation of a light having a wavelength of not less than 700 nm, it is not believed to suggest blocking an ultraviolet light such that the photochromic

material can be sensitized by a light having a wavelength of not less than 700 nm. Thus, the structure recited in Claim 13 is believed to be distinguishable from Ghaddar et al.

Because none of Srinivasa et al., Baumann et al., Ghaddar et al. and Ceroni et al. discloses the ultraviolet light blocking device as recited in Claim 13, even the combined teachings of these cited references are not believed to render the structure recited in Claim 13 obvious.

Likewise, Claims 18 and 26 are believed to include subject matters substantially similar to what is recited in Claim 13 to the extent discussed above. Thus, Claims 18 and 26 are also distinguishable from Srinivasa et al., Baumann et al., Ghaddar et al. and Ceroni et al.

For the foregoing reasons, Claims 13, 18 and 26 are believed to be allowable. Furthermore, since Claims 14-17, 19-25 and 27-32 ultimately depend from one of Claims 13, 18 and 26, substantially the same arguments set forth above also apply to these dependent claims. Hence, Claims 14-17, 19-25 and 27-32 are believed to be allowable as well.

In view of the amendments and discussions presented above, Applicants respectfully submit that the present application is in condition for allowance, and an early action favorable to that effect is earnestly solicited.

Respectfully submitted,

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